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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,340	08/27/2003	Kiyoshi Ogishima	4034-40	5339

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EXAMINER	
CHEN, WEN YING PATTY	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

BK

Office Action Summary	Application No.	Applicant(s)	
	10/648,340	OGISHIMA ET AL.	
	Examiner	Art Unit	
	Wen-Ying P. Chen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-8 and 10-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 10-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/06/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed Jan. 30, 2006 has been received and entered. Claims 3 and 9 are cancelled per the Amendment filed. Claims 1, 2, 4-8 and 10-19 remain pending in the current application.

Drawings

Figures 2A and 2B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

The indicated allowability of claims 3, 9 and 14-19 is withdrawn in view of the newly discovered reference(s) to Song et al. (US 6710837). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

Claims 1-2, 4-8 and 10-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. (US 6710837).

With respect to claim 1 (Amended): Song et al. disclose a liquid crystal display device comprising a first substrate, a second substrate, and a vertical alignment type liquid crystal layer including liquid crystal molecules having negative dielectric anisotropy disposed between the first substrate and the second substrate (Abstract),

the device having a plurality of picture-element regions each defined by a first electrode (Figure 12, element 200) placed in the first substrate on the side facing the liquid crystal layer and a second electrode placed in the second substrate to oppose to the first electrode via the liquid crystal layer (Abstract),

in each of the plurality of picture-element regions, the liquid crystal layer having a plurality of liquid crystal regions different in the direction in which liquid crystal molecules tile when a voltage is applied between the first electrode and the second electrode (as shown in Figure 12, wherein the pixel region is divided into multiple regions by the projections and the apertures, wherein the liquid crystal molecule is tilted with respect to the projections and the apertures),

wherein at least one of the first substrate and the second substrate has a light-shield layer (Figure 12, element 110) overlapping at least part of a boundary region defined as regions separating the plurality of liquid crystal regions from each other (regions defined by element 170 and 270), and

the at least part of boundary region overlapping the light-shield layer is a region permitting liquid crystal molecules surrounding the region to tilt so that ends of the liquid crystal molecules closer to the substrate having the light-shield layer go away from the boundary region when a voltage is applied between the first electrode and the second electrode;

a pair of polarizing plates placed opposing to each other via the liquid crystal layer so that their polarization axes are substantially perpendicular to each other (Column 9, lines 57-59), and

wherein in each of the plurality of picture-element regions, at least one of the first substrate and the second substrate has an additional light-shield layer (Figure 12, element 110) overlapping at least part of regions in which liquid crystal molecules tilt in directions substantially parallel to the polarization axes of the pair of polarizing plates (regions corresponding to elements 272 and 172) when a voltage is applied between the first electrode and the second electrode (wherein the directions of the polarization axes is shown in Figure 8A, and that in regions corresponding to elements 272 and 172, since it's a middle region between the two oppositely tilt regions, therefore, the liquid crystal molecules will be aligned in a neutral direction which is parallel to the direction of the polarization axes).

As to claim 2: Song et al. further disclose that the light-shield layer is placed with a predetermined spacing from the liquid crystal layer (Column 9, lines 44-56; wherein the light-shield layer is placed on the second substrate covered by the color filter layer and further covered by the common electrode).

As to claim 4: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one protrusions (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the

liquid crystal layer, and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion.

As to claim 5: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270) and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by an inclined electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 6: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrates and the second substrates has at least one protrusion (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the liquid crystal layer,

at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270), and

the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion and an inclined electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 7: Song et al. further disclose in Column 9 lines 8-15 that the first substrate further includes switching elements (wherein the switching elements are TFTs) respectively placed to correspond to the plurality of picture-element regions, and

the first electrode comprises a plurality of picture-element electrodes (Figure 12, element 200) respectively placed for the plurality of picture-element regions and switched with the

switching elements, and the second electrode comprises at least one counter electrode opposed to the plurality of picture-element electrodes.

With respect to claim 8 (Amended): Song et al. disclose a liquid crystal display device comprising a first substrate, a second substrate, and a vertical alignment type liquid crystal layer including liquid crystal molecules having negative dielectric anisotropy disposed between the first substrate and the second substrate (Abstract),

the device having a plurality of picture-element regions each defined by a first electrode placed (Figure 12, element 200) in the first substrate on the side facing the liquid crystal layer and a second electrode placed in the second substrate to oppose to the first electrode via the liquid crystal layer (Abstract),

in each of the plurality of picture-element regions, the liquid crystal layer having a plurality of liquid crystal regions different in the direction in which liquid crystal molecules tile when a voltage is applied between the first electrode and the second electrode (as shown in Figure 12, wherein the pixel region is divided into multiple regions by the projections and the apertures, wherein the liquid crystal molecule is tilted with respect to the projections and the apertures),

the plurality of liquid crystal regions of the liquid crystal layer including a first liquid crystal region of which the retardation value for light incident on the liquid crystal layer obliquely from the normal to the liquid crystal layer increases with rise of an applied voltage and a second liquid crystal region of which the retardation value first decreases and then increases (inherent function of the device since it's structured the same as the invention),

wherein the device comprises a light-shield layer (Figure 12, element 110) selectively shading the first liquid crystal region when the device is observed in a direction oblique from the normal to the display plane,

a pair of polarizing plates placed opposing to each other via the liquid crystal layer so that their polarization axes are substantially perpendicular to each other (Column 9, lines 57-59), and

wherein in each of the plurality of picture-element regions, at least one of the first substrate and the second substrate has an additional light-shield layer (Figure 12, element 110) overlapping at least part of regions in which liquid crystal molecules tilt in directions substantially parallel to the polarization axes of the pair of polarizing plates (regions corresponding to elements 272 and 172) when a voltage is applied between the first electrode and the second electrode (wherein the directions of the polarization axes is shown in Figure 8A, and that in regions corresponding to elements 272 and 172, since it's a middle region between the two oppositely tilt regions, therefore, the liquid crystal molecules will be aligned in a neutral direction which is parallel to the direction of the polarization axes).

As to claim 10: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one protrusions (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the liquid crystal layer, and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion.

As to claim 11: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270) and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is

defined by an inclined electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 12: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrates and the second substrates has at least one protrusion (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the liquid crystal layer,

at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270), and

the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion and an inclined electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 13: Song et al. further disclose in Column 9 lines 8-15 that the first substrate further includes switching elements (wherein the switching elements are TFTs) respectively placed to correspond to the plurality of picture-element regions, and

the first electrode comprises a plurality of picture-element electrodes (Figure 12, element 200) respectively placed for the plurality of picture-element regions and switched with the switching elements, and the second electrode comprises at least one counter electrode opposed to the plurality of picture-element electrodes.

With respect to claim 14: Song et al. disclose a liquid crystal display device comprising a first substrate, a second substrate, and a vertical alignment type liquid crystal layer including liquid crystal molecules having negative dielectric anisotropy disposed between the first

substrate and the second substrate (Abstract), and a pair of polarizing plates placed opposing to each other via the liquid crystal layer so that their polarization axes are substantially perpendicular to each other (Column 9, lines 57-59),

the device having a plurality of picture-element regions each defined by a first electrode (Figure 12, element 200) placed in the first substrate on the side facing the liquid crystal layer and a second electrode placed in the second substrate to oppose to the first electrode via the liquid crystal layer (Abstract),

in each of the plurality of picture-element regions, the liquid crystal layer having a plurality of liquid crystal regions different in the direction in which liquid crystal molecules tile when a voltage is applied between the first electrode and the second electrode (as shown in Figure 12, wherein the pixel region is divided into multiple regions by the projections and the apertures, wherein the liquid crystal molecule is tilted with respect to the projections and the apertures),

wherein in each of the plurality of picture-element regions, at least one of the first substrate and the second substrate has a light-shield layer (Figure 12, element 110) overlapping at least part of regions defined as regions in which liquid crystal molecules tilt in directions substantially parallel to the polarization axes of the pair of polarizing plates (regions corresponding to elements 272 and 172) when a voltage is applied between the first electrode and the second electrode (wherein the directions of the polarization axes is shown in Figure 8A, and that in regions corresponding to elements 272 and 172, since it's a middle region between the two oppositely tilt regions, therefore, the liquid crystal molecules will be aligned in a neutral direction which is parallel to the direction of the polarization axes).

As to claim 15: Song et al. further disclose in Column 9 lines 44-56 that the light-shield layer is placed substantially right on the liquid crystal layer (wherein the light-shield layer is disposed on the second substrate covered by the color filter layer and further covered by the counter electrode, thus is substantially right on the liquid crystal layer).

As to claim 16: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one protrusions (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the liquid crystal layer, and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion.

As to claim 17: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270) and the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by an inclined electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 18: Song et al. further disclose in Column 9 lines 8-15 that at least one of the first substrates and the second substrates has at least one protrusion (Figure 12, element 170) having a slant side (protrusion shape is shown in Figure 5) formed on the surface facing the liquid crystal layer,

at least one of the first substrate and the second substrate has at least one opening (Figure 12, element 270), and

the direction in which liquid crystal molecules tilt in each of the plurality of liquid crystal regions is defined by orientation-regulating force of the at least one protrusion and an inclined

electric field generated at an edge portion of the at least one opening when a voltage is applied between the first electrode and the second electrode.

As to claim 19: Song et al. further disclose in Column 9 lines 8-15 that the first substrate further includes switching elements (wherein the switching elements are TFTs) respectively placed to correspond to the plurality of picture-element regions, and

the first electrode comprises a plurality of picture-element electrodes (Figure 12, element 200) respectively placed for the plurality of picture-element regions and switched with the switching elements, and the second electrode comprises at least one counter electrode opposed to the plurality of picture-element electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen
Examiner
Art Unit 2871

WPC
3/07/06

ANDREW SCHECHTER
PRIMARY EXAMINER